

4.17 SITE-WIDE ENVIRONMENTAL MANAGEMENT MATRIX

Table 4-3 presents a Site-Wide Environmental Management Matrix. The matrix provides an overview of impact issues associated with individual components of the Proposed Action. It will also serve NWTC staff, managers and other decision-making persons and entities by providing a quick reference guide for the key issue raised by anticipated short-term and long-term improvement programs at the NWTC.

The matrix covers a wide range of issues. These issues and others are managed at the NWTC under a series of Environmental, Safety and Health (ES&H) policies and programs developed and implemented by DOE and NREL. The ES&H policies and programs are well developed and are already integrated into NWTC operations and processes for new projects.

The matrix lists each of the key components of the short-term and long-term improvement programs anticipated at the NWTC and then compares them to key environmental management issues. The improvements and environmental issues are presented in the same order as they are presented in Chapters 2, 3 and 4 of the EA. If limits on the number, location or other characteristics of a particular improvement are defined in the EA, those limits or ceilings are noted. If issue clarifications are needed and/or important NEPA “significance” thresholds can be characterized for a particular issue, details are provided in subsequent footnotes.

At this time, no other possible improvements/changes are anticipated. However, in an effort to improve the utility of this tool, additional improvements/changes are included in the matrix to guide site managers in the event that unforeseen circumstances warrant changes to the program of improvements.

No mark in the matrix indicates that a particular issue does not relate to a particular improvement. An “X” in the matrix indicates that a particular issue applies or may apply to the corresponding improvement. In many cases, NREL has made commitments related to this issue or has ES&H policies and procedures in place that relate to this issue and may need to be considered as part of project implementation. A red “X” indicates high sensitivity for a particular improvement to the corresponding issue. If an X is present, existing ES&H practices and procedures and corresponding commitments presented in Chapter 1 of the EA should be evaluated to determine whether and how they may apply.

Table 4-3. Site-Wide Environmental Management Matrix

PROGRAM OF IMPROVEMENTS	POTENTIAL ISSUES	Facility and Research Area Modification and Construction									
		SHORT-TERM		MEDIUM-TERM		LONG-TERM		TEST FACILITY		TEST SITES	
Emergency Services											
Sewage Generation											
Water Use											
Power Use											
Disposal of Hazardous Materials (10)											
Generation of Haz. Materials (10)											
Use of Hazardous Materials (10)											
Cultural Resources (9)											
Avian (Bird or Bat) Impacts											
Wetlands (8)											
Ute Ladies'-Tresses Orchid Habitat (8)											
Prebles' Meadow Jumping Mouse Habitat (8)											
Tall Grass Prairie (8)											
Aggregate Resources (7)											
Soils											
Storm Water											
Ground Water Resources											
Surface Water Resources											
Visibility and Visual Impact (6)											
Traffic Noise											
Equipment Noise											
Air Quality Attainment Goals (5)											
Air Pollution Emissions (5)											
Air Pollution Constituents (5)											
Traffic Safety and Accidents (4)											
Traffic Generation and Congestion (4)											
Site Circulation and Parking (2)											
Social or Economic Impact											
Comp. with Local Planning Policy (3)											
Site-Wide Land Use Compatibility (2)											
Off-Site Land Use Compatibility (1)											

X=Issue applies or may apply
X(red)=High sensitivity to the issue

Table 4-3. Site-Wide Environmental Management Matrix

POTENTIAL ISSUES	PROGRAM OF IMPROVEMENTS				
	Const. of a DERTF (general location specified) Phase 1: Construction of a Systems Interconnection Test Lab (10,000 sq. ft., 10 emp)	Const. of a DERTF (general location specified) Phase 2: Construction of a Hybrid and System Test Lab (additional 10,000 sq. ft. and 10 more employees)	Construction of a Distributed Energy Resources (DER) Test Area (location in development area specified in general terms)	Installation of Large and Small Solar Dish/Converter Systems	Fuel Cell Thermal and Moisture Management Research (1000 square feet, fuel cells up to 55 kW)
Emergency Services	X				
Sewage Generation	X	X			
Water Use	X	X			
Power Use	X	X			
Disposal of Hazardous Materials (10)	X	X			
Generation of Haz. Materials (10)	X	X			
Use of Hazardous Materials (10)	X				
Cultural Resources (9)					
Avian (Bird or Bat) Impacts					
Wetlands (8)					
Ute Ladies'-Tresses Orchid Habitat (8)					
Prebles' Meadow Jumping Mouse Habitat (8)					
Tall Grass Prairie (8)					
Aggregate Resources (7)					
Soils	X	X			
Storm Water	X				
Ground Water Resources					
Surface Water Resources					
Visibility and Visual Impact (6)	X	X			
Traffic Noise					
Equipment Noise	X				
Air Quality Attainment Goals (5)					
Air Pollution Emissions (5)					
Air Pollution Constituents (5)					
Traffic Safety and Accidents (4)					
Traffic Generation and Congestion (4)	X	X			
Site Circulation and Parking (2)	X	X			
Social or Economic Impact					
Comp. with Local Planning Policy (3)					
Site-Wide Land Use Compatibility (2)	X				
Off-Site Land Use Compatibility (1)					

X=Issue applies or may apply
X(red)=High sensitivity to the issue

Table 4-3. Site-Wide Environmental Management Matrix

PROGRAM OF IMPROVEMENTS	POTENTIAL ISSUES														
	Renovation of the East Wing of Building 251			Modification of Existing Facilities			Infrastructure Improvements								
Emergency Services							X	X	X	X	X				
Sewage Generation															
Water Use															
Power Use															
Disposal of Hazardous Materials (10)															
Generation of Haz. Materials (10)															
Use of Hazardous Materials (10)															
Cultural Resources (9)															
Avian (Bird or Bat) Impacts															
Wetlands (8)															
Ute Ladies'-Tresses Orchid Habitat (8)															
Prebles' Meadow Jumping Mouse Habitat (8)															
Tall Grass Prairie (8)															
Aggregate Resources (7)															
Soils															
Storm Water															
Ground Water Resources															
Surface Water Resources															
Visibility and Visual Impact (6)	X														
Traffic Noise															
Equipment Noise															
Air Quality Attainment Goals (5)															
Air Pollution Emissions (5)															
Air Pollution Constituents (5)															
Traffic Safety and Accidents (4)															
Traffic Generation and Congestion (4)															
Site Circulation and Parking (2)															
Social or Economic Impact															
Comp. with Local Planning Policy (3)	X														
Site-Wide Land Use Compatibility (2)		X													
Off-Site Land Use Compatibility (1)			X												
Upgrade the Existing Electrical Infrastructure, Option 1 Upgrade Switchgear and Cable, 20 MVA				X	X										
Upgrade the Existing Electrical Infrastructure, Option 2 Separate 10 MVA Feeder Line, different Switchgear and Substation					X	X									
Extend Natural Gas Pipeline from Highway 93 to the Site, (6 inch pipeline, complete service loop), Option 1 Northern Route						X	X								
Extend Natural Gas Pipeline from Highway 93 to the Site, (6 inch pipeline, complete service loop), Option 2 Southern Route							X	X							
Upgrade and Extend Telecommunications Infrastructure								X	X						

X=Issue applies or may apply
X(red)=High sensitivity to the issue

Table 4-3. Site-Wide Environmental Management Matrix

PROGRAM OF IMPROVEMENTS		POTENTIAL ISSUES											
		Emergency Services			Sewage Generation			Water Use			Power Use		
Upgrade Existing (Independent) Domestic Water System	X							X	X				
Upgrade Fire Protection System	X							X	X				
Upgrade Sewage System	X												
Upgrade and Modify On-Site Roads, Parking Areas, and Site Entrance	X							X	X				
Implementation of Security Modifications								X					
Site Activities and Routine Maintenance													
Office and Lab Work													
Installing and Removing Wind Turbines, Meteorological Towers and Instrumentation, and Installation of the Necessary Infrastructure													
Maintenance and Monitoring of Atmospheric and Wind Turbine Experiments, Tests and Certifications													
Onsite Environmental Monitoring								X	X				
Site Amenities	X									X			
Fuel Storage and Use								X	X				
													X

X=Issue applies or may apply
X(red)=High sensitivity to the issue

Table 4-3. Site-Wide Environmental Management Matrix

POTENTIAL ISSUES	LONG-TERM	PROGRAM OF IMPROVEMENTS					OTHER POSSIBLE IMPROVEMENTS/CHANGES
		Emergency Services	Sewage Generation	Water Use	Power Use	Disposal of Hazardous Materials (10)	
Emergency Services				X X X			X
Sewage Generation				X X X			
Water Use				X X			
Power Use				X			
Disposal of Hazardous Materials (10)							
Generation of Haz. Materials (10)						X X X	
Use of Hazardous Materials (10)						X X X	
Cultural Resources (9)						X X X	
Avian (Bird or Bat) Impacts						X	
Wetlands (8)							X X
Ute Ladies'-Tresses Orchid Habitat (8)							
Prebles' Meadow Jumping Mouse Habitat (8)							
Tall Grass Prairie (8)							
Aggregate Resources (7)							
Soils				X X			
Storm Water				X			
Ground Water Resources							
Surface Water Resources							
Visibility and Visual Impact (6)				X			
Traffic Noise						X	
Equipment Noise					X		
Air Quality Attainment Goals (5)							
Air Pollution Emissions (5)							
Air Pollution Constituents (5)							
Traffic Safety and Accidents (4)				X X			
Traffic Generation and Congestion (4)							
Site Circulation and Parking (2)				X			
Social or Economic Impact							
Comp. with Local Planning Policy (3)							
Site-Wide Land Use Compatibility (2)				X			
Off-Site Land Use Compatibility (1)							
		OTHER POSSIBLE IMPROVEMENTS/CHANGES					
		Accelerated Development Schedule	X	X X			
		Decelerated Development Schedule	X				
							Substantial changes to land use designations; new allowable uses or activities presenting new potential impacts or risks, allow uses in areas reserved for other uses, loss of conservation management areas, conversion of test site areas to permanent facility development areas

X=Issue applies or may apply
X(red)=High sensitivity to the issue

Table 4-3. Site-Wide Environmental Management Matrix

POTENTIAL ISSUES	PROGRAM OF IMPROVEMENTS				
	New roads or utility extensions	Turbines larger than 5 MW	Meteorological Towers in excess of 180 meters	More overall building square footage, more than 300 employees, taller buildings	Other Improvements that Exceed Designated Limits
Emergency Services				X	
Sewage Generation					
Water Use					
Power Use				X	
Disposal of Hazardous Materials (10)			X		
Generation of Haz. Materials (10)					
Use of Hazardous Materials (10)			X		
Cultural Resources (9)				X	
Avian (Bird or Bat) Impacts			X		
Wetlands (8)			X		
Ute Ladies'-Tresses Orchid Habitat (8)					
Prebles' Meadow Jumping Mouse Habitat (8)					
Tall Grass Prairie (8)			X		
Aggregate Resources (7)				X	
Soils			X		
Storm Water			X		
Ground Water Resources			X		
Surface Water Resources				X	
Visibility and Visual Impact (6)			X		
Traffic Noise					
Equipment Noise			X		
Air Quality Attainment Goals (5)					
Air Pollution Emissions (5)					
Air Pollution Constituents (5)					
Traffic Safety and Accidents (4)			X		
Traffic Generation and Congestion (4)			X		
Site Circulation and Parking (2)			X		
Social or Economic Impact					
Comp. with Local Planning Policy (3)			X		
Site-Wide Land Use Compatibility (2)			X		
Off-Site Land Use Compatibility (1)			X		

X=Issue applies or may apply
X(red)=High sensitivity to the issue